An Analysis on Scrum Methodology Used For the IT Project for Effective Software Deliverable

M. Mahalakshmi[1], DR. M. Sundararajan[2]

[1]Research Scholar, St. Peter's University, Avadi , India

[2]Asst. Professor, Department of Computer Science, Govt. Arts College for Men, Nandanam, Chennai-35

mahalakshmi_best@yahoo.co.in, drmsrajan23@yahoo.com

Abstract : Many software companies and software development approaches were introduced during the past forty years to produce valuable software within time and with minimal costs. To meet this kind of requirements SCRUM methodology were introduced. SCRUM is one of Agile methodology. This paper presents a review about all the agile methodologies and recommends SCRUM is best among those methodologies.
Keywords— ASD, AUP, Crystal Methods, DSDM, XP, FDD, Kanban, Scrum, Comparison between methodologies.

I. Introduction

Software development is regular process, it is expanding day-by-day and it's becoming more difficult and challenging. Customer expectations are always high, to satisfy customer expectations in this changing environment we can use SCRUM. SCRUM is one of the agile methodology, which is based on iterative and incremental development. The Agile methodology helps project makers to build software applications with ease. In this methodology, the each step of software development such as analysis, design, implementation, testing, maintenance are continually monitored and changes are accepted at any time. Agile is like a Tree with many branches like Adaptive Software Development (ASD), Agile Unified Process (AUP), Crystal Methods (Crystal Clear), Dynamic Systems Development Method (DSDM), Extreme Programming (XP), Feature Driven Development (FDD), Kanban, Scrum. In this paper, we discuss about methodologies of agile, differences, and analysis on SCRUM methodology.

II. Agile Methodologies

### 1.Adaptive Software Development (ASD)

Adaptive Software Development is proposed by Jim High smith, it replaces the traditional waterfall cycle. It provides for continuous learning. The characteristics of an ASD life cycle uses time boxed, where the schedule is divided into a number of separate time periods and time boxes.
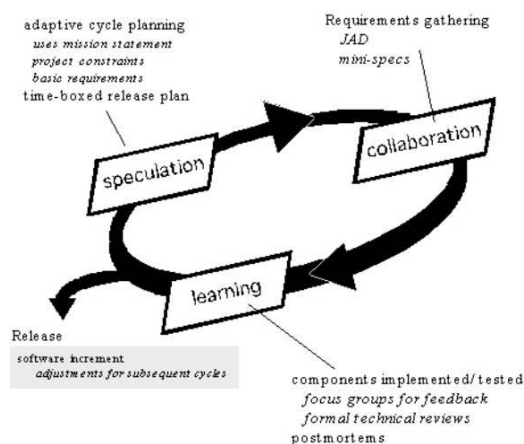
2.Agile Unified Process (AUP)

AUP developed by Scott Ambler and it is a simplified version of RUP – Rational Unified Process. It is used to develop software application using agile techniques. It has few philosophies simple, agility, focus only on high value activities and independent to use any set of tools. It includes the concepts like agile modeling, TDD (Test driven development), agile change management to increase software productivity and to improve quality of the software.
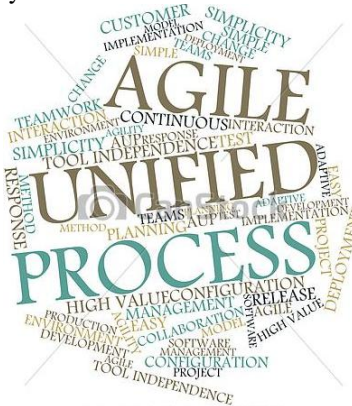

3.Crystal Methods (Crystal Clear)

Crystal Clear is described by Alistair Cockburn and it is an example of an agile or lightweight methodology. It focus on project efficiency, deliver of code to users frequently, it always focus on people instead of process or artifacts. It is one of the lightweight approach for software development. Crystal is the

combination of Crystal clear, Crystal Yellow, Crystal Orange and others. To meet the project characteristics it has policies, practices and several processes.

4.Dynamic Systems Development Method (DSDM)

It is a software development method, released in 1994. It is an iterative and incremental approach. DSDM focus on frequent delivery of products. Requirements are handled in proper way and changes during development are reversible. Testing is integrated throughout the life cycle.
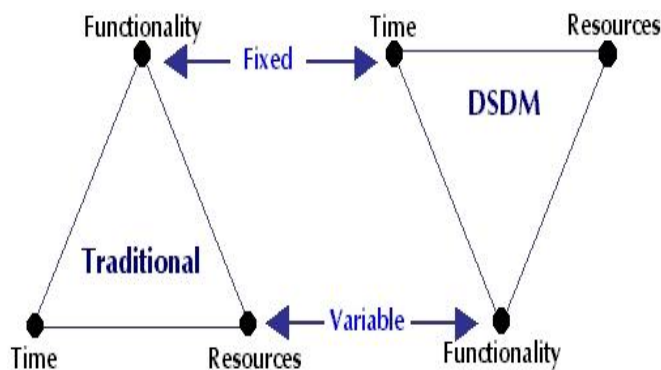

5.Extreme Programming (XP)

Extreme Programming was created by Kent Beck. XP is famous methodology in Agile, which is intended to improve quality of software. It has built-In Quality, very simple, programmer and customer can adopt changes in the project. The following picture consists of 12 practices of XP.
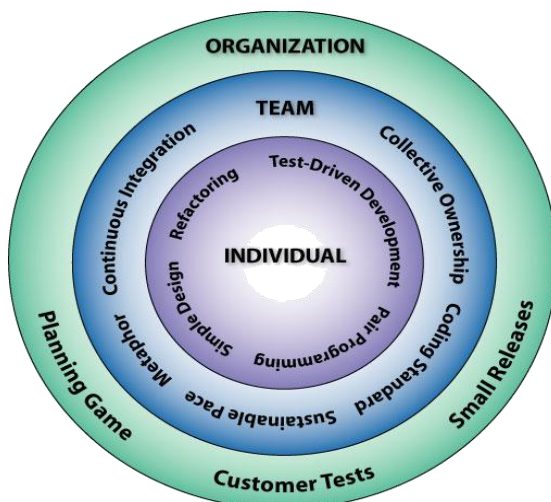
6.Feature Driven Development (FDD)

FDD is proposed by Peter Coad, it is iterative and incremental software development process. It frequently delivers results at all step, it provides accurate and meaning information because of this it is liked by many clients, developers and managers.
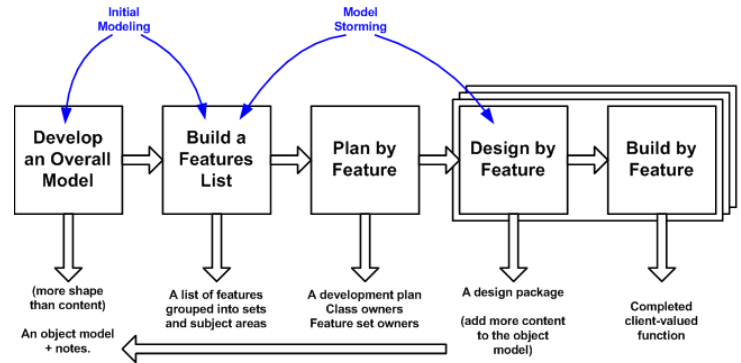

7.Kanban

Kanban is a agile method used for managing the products creation and to deliver the project just-in-time without giving burden to the team. It has three basic principles like workflow, balance the work flow, and enhance the work flow. It encourages ongoing learning and improving the best team workflow.

8.Scrum

SCRUM was initiated by Ken Swaber in 1995. It was included in agile methodology since it contains the same concepts of agile. A SCRUM is a team pack, where everyone in the team acts together. It delivers the project within time and with minimal cost.

Product owner, Scrum master, Scrum team are the SCRUM roles. SCRUM meetings are sprint planning meeting, sprint, daily scrum, sprint review meeting and Scrum retrospective meeting. SCRUM consists of Artifacts like Product Backlog, Sprint Backlog, Burn down chart. SCRUM not only used for building software project, we can use SCRUM for planning any kind of work like conference, business, education and in other fields also. Today many software company using SCRUM when compare other agile methodologies. Product development in cycles of work called Sprints, iterations of work which are typically 1-4 weeks in length, and which take place one after the other.

SCRUM is a lightweight and series of process frameworks. Using SCRUM, it is easy achieve milestones.
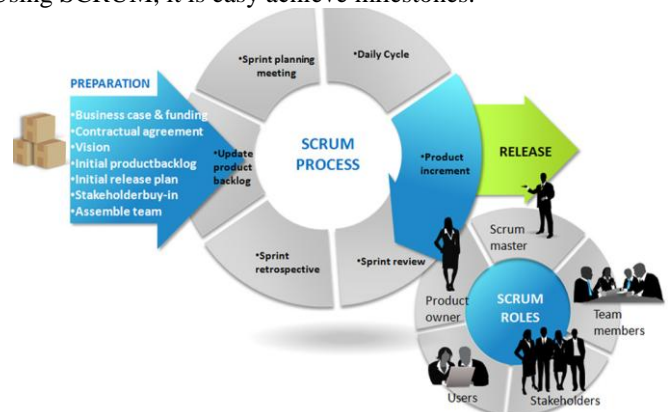
Advantages of Scrum
- Scrum increase the quality of product / project
- It is not only suitable for IT project, it is also suitable for non-IT projects also.
- Accept and expect the changes
- Benefits to customer and project manager
- Scrum is fast methodology when compare to other methodologies
- Easy to adopt changes
- Work estimates are much easier

Comparison between Agile methodologies

Characteristics	ASD	AUP	Crystal Methods	DSDM	XP	FDD	Kanban	Scrum
Development approach	Iterative	Iterative and Incremental	Incremental	Iterative	Iterative	Iterative and Incremental	Incremental	Iterative
Size of the Project	Small projects	Small or large projects	All types of project	All types of project	Small projects	Complex projects	Small or large projects	All types of project
Documentation	Basic documentation	Less documentation	Basic documentation	Documentation exist	Basic documentation	Documentation is important	Basic documentation	Basic documentation

IV. Conclusion

As we discussed about Agile methodologies, advantages of SCRUM and comparison between various methodologies, according to our point of view , SCRUM provides good quality and software productivity. In this fast moving world nothing is stable, changes in software must be accepted and implemented in proper way for which SCRUM is the best methodology. Many software companies started implementing SCRUM in their project when compare to other methodologies in agile. SCRUM can be used in IT and non-IT projects in most effective way.

REFERENCES

i. Ambler, S. (2002). "Agile Modeling: Effective Practices for XP and RUP.".

ii. Beck, K. &. (2001). "Manifesto for Agile Software Development". Agile Alliance.

iii. Beck, K. (2003). "Test-Driven Development by Example".

iv. David Cohen, M. L. (2003). "Agile Software Development",Data & Analysis Center for Software.

v. Forsberg, K. a. (1991). "The Relationship of Systems Engineering to the Project Cycle," First Annual Symposium of the National Council On Systems Engineering (NCOSE).

vi. K, P. (2010). "Doctoral research in Sweden Implementing Lean and Agile Software Development in Industry".

vii. http://www.mountaingoatsoftware.com/topics/scrum

viii. http://en.wikipedia.org/wiki/Scrum_%28development%29

ix. K. Schwaber and J. Sutherland. The Scrum Guide. Scrum.org, 2010.

x. A. Sutherland, J. Sutherland, and C. Hegarty, "Scrum in Church: Saving the World One